Stibnite Gold Project
Proposed Early Actions Briefing

January 30, 2020

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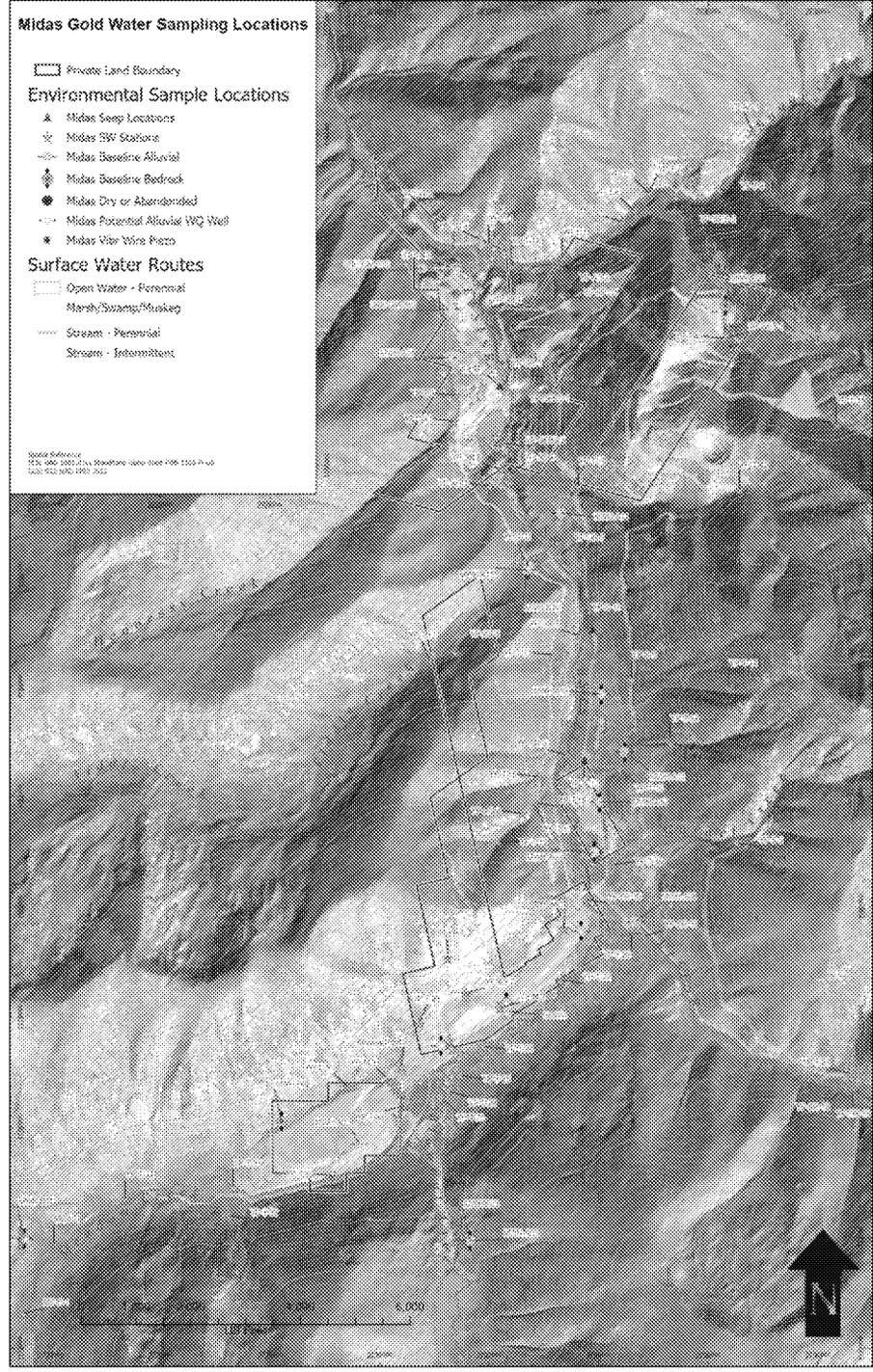
January 30, 2020

Presentation Outline

- Site Water Quality Overview
  - Baseline water quality data overview
  - Site Loads analysis
- Proposed Early Actions
  - Hennessy Creek Diversion
  - Diversion around Meadow Creek Mill and Smelter Complex
  - DMEA Adit and Dump Diversion
- Discussion

Baseline water quality summary

- CERCLA and NEPA compliant data QA/QC
- 32 perennial stream surface water monitoring locations
- 23 surface water seeps, adit seeps and other mining features
- 19 alluvial monitoring wells
- 12 bedrock monitoring wells
- 2012-current, monthly or quarterly monitoring data
- 41 monthly constituents and 68 quarterly constituents including metals/metalloids, anions, cations, and field parameters
- Additional sample locations added periodically



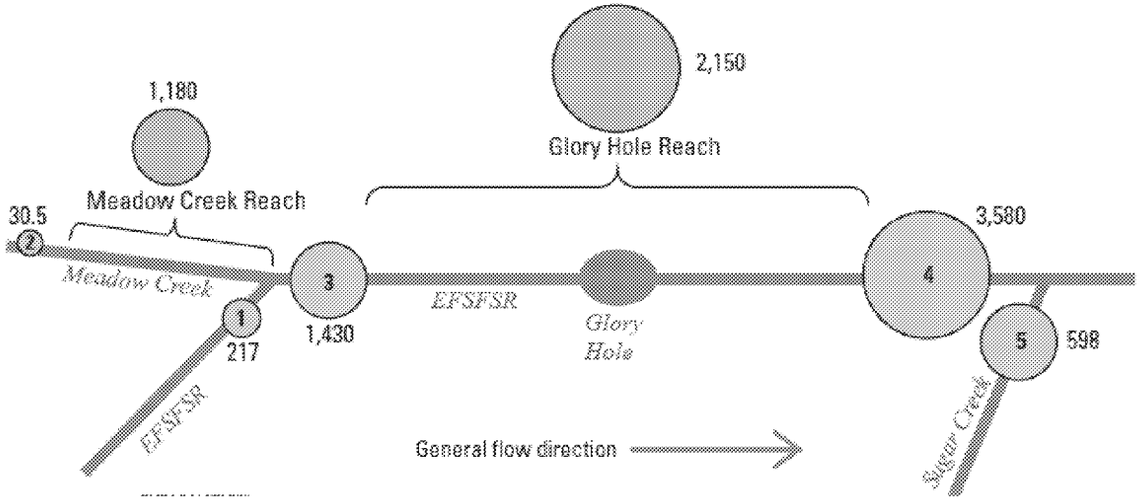
Site Map showing surface and ground water monitoring locations

Baseline water quality summary

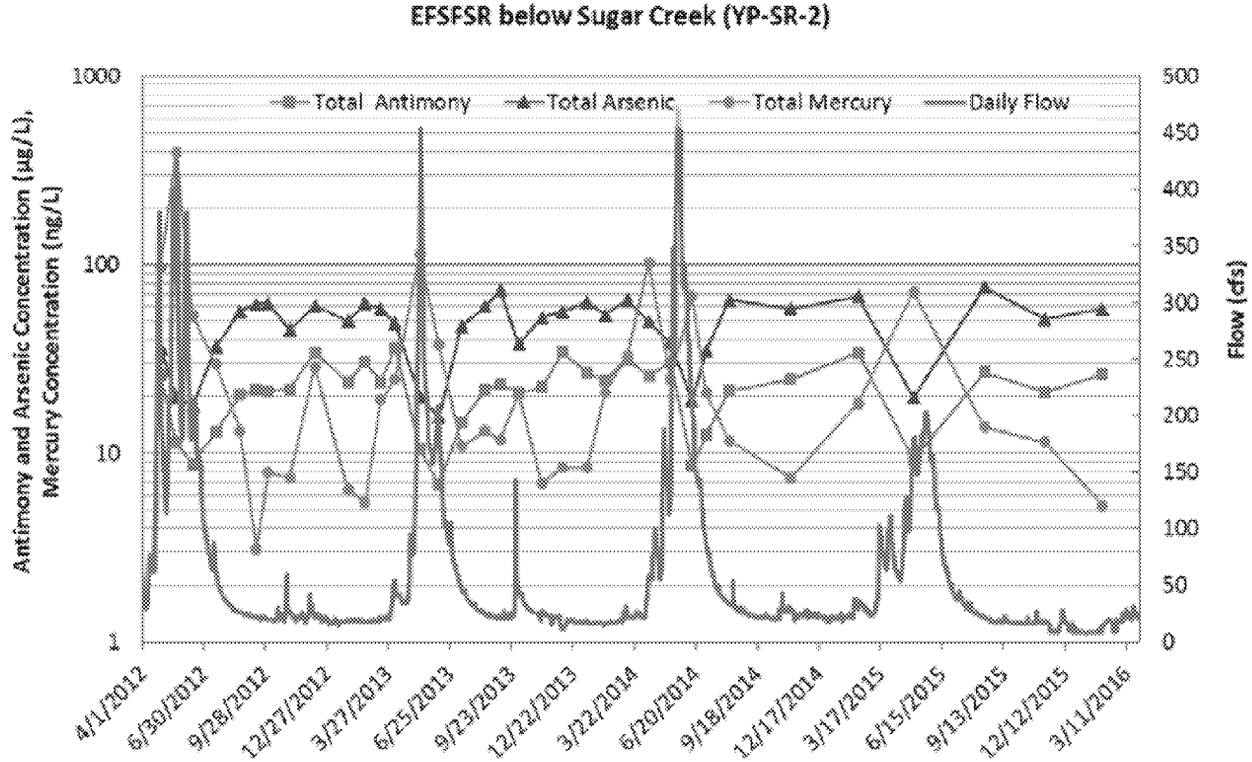
- Arsenic and antimony are key COIs
- Meadow Creek and Bradley Pit reach are significant sources of arsenic and antimony

- Arsenic and antimony concentrations generally show inverse relationship with discharge
- WQ data from non mining impacted areas show elevated metal concentrations

2015 USGS Stibnite Water Quality Study



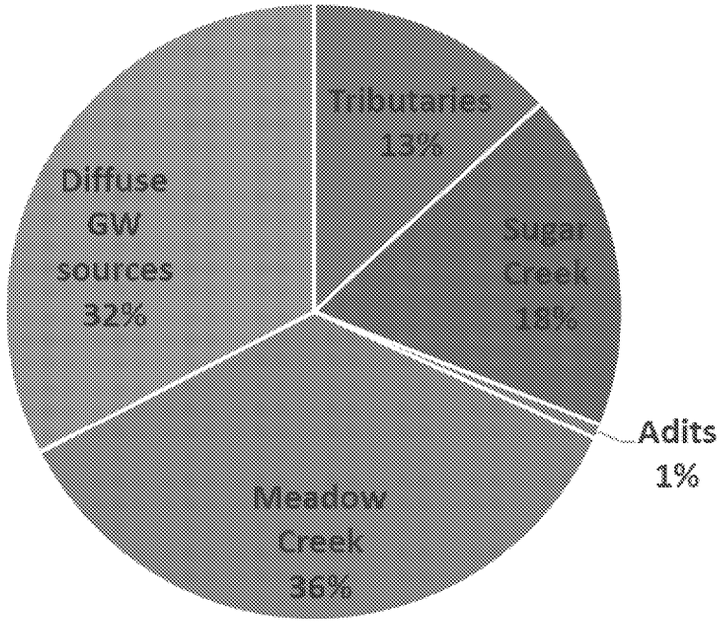
Annual mean arsenic concentration (lbs/yr) (USGS)



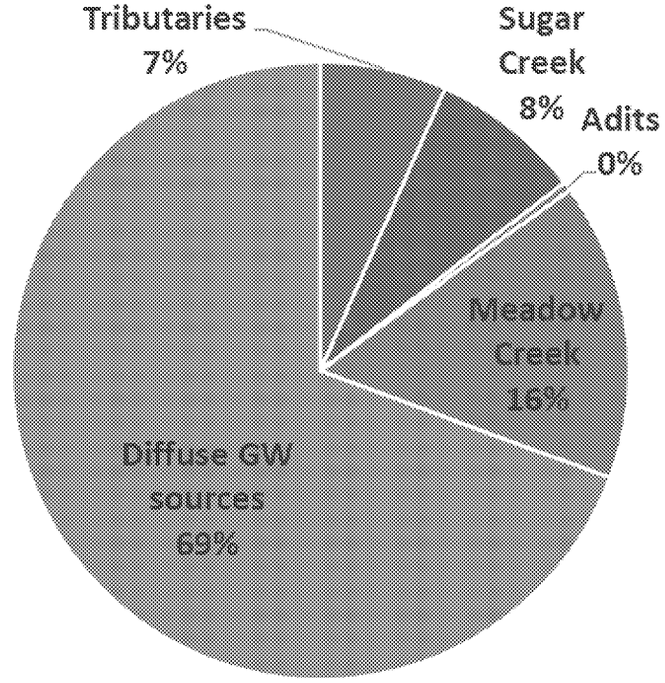
COIs at downstream monitoring location YP-SR-2 (BC 2017)

Surface water dissolved arsenic load distribution

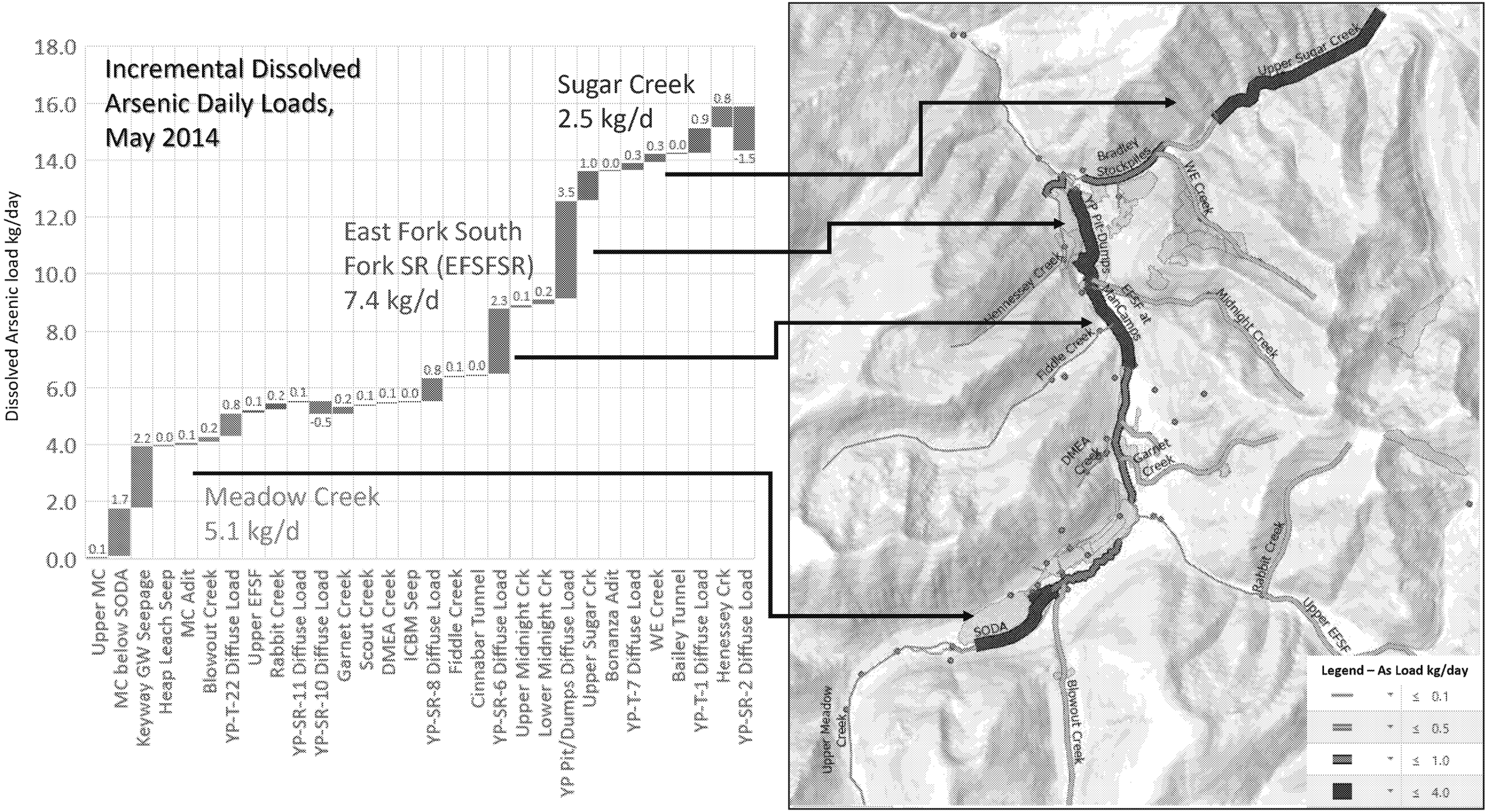
- Flow estimates used for each sampling location to calculate constituent loads
- 2014 data generally representative and captures peak runoff
- Percentage loads calculated relative to farthest downstream monitoring location YP-SR-2
- Data used in early action selection process



May 2014 – Peak runoff



Aug 2014 – baseflow conditions



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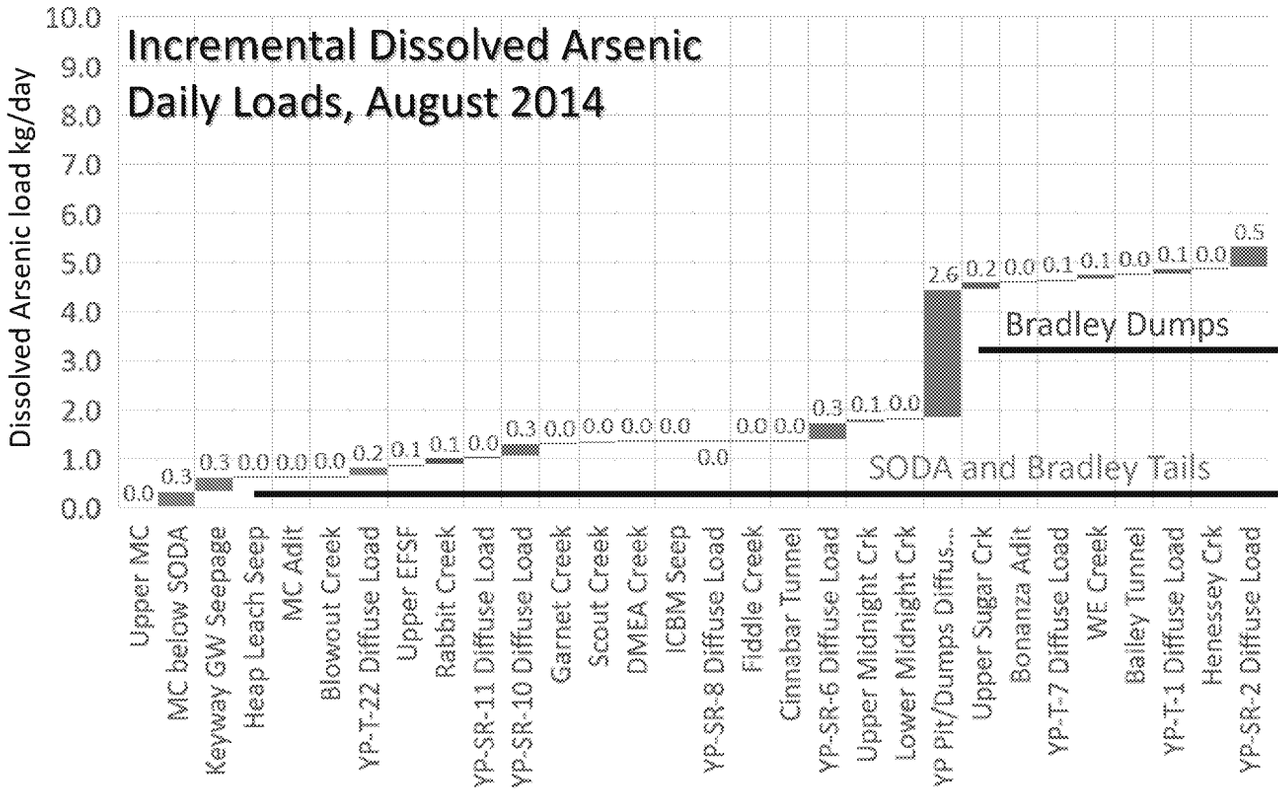
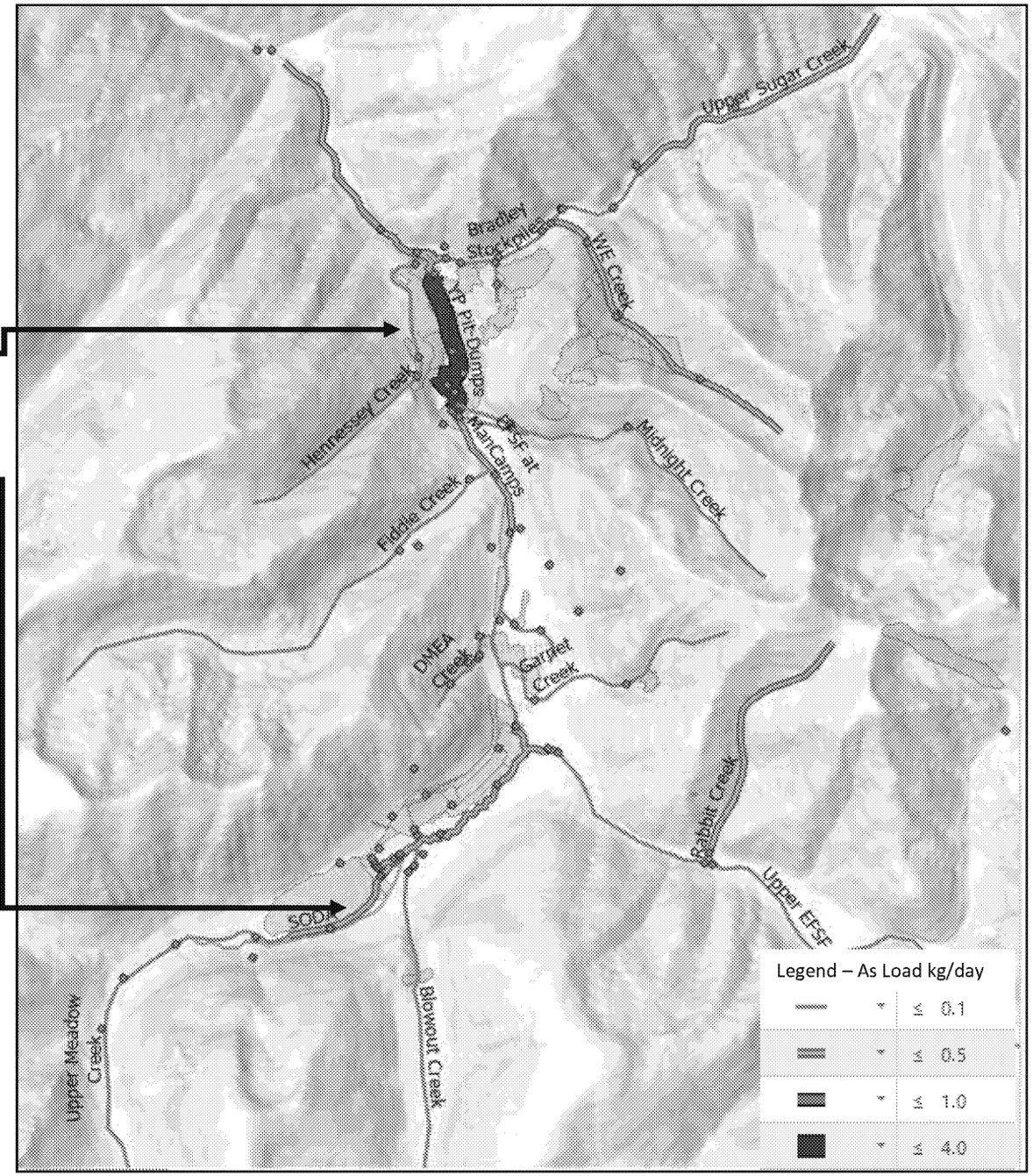


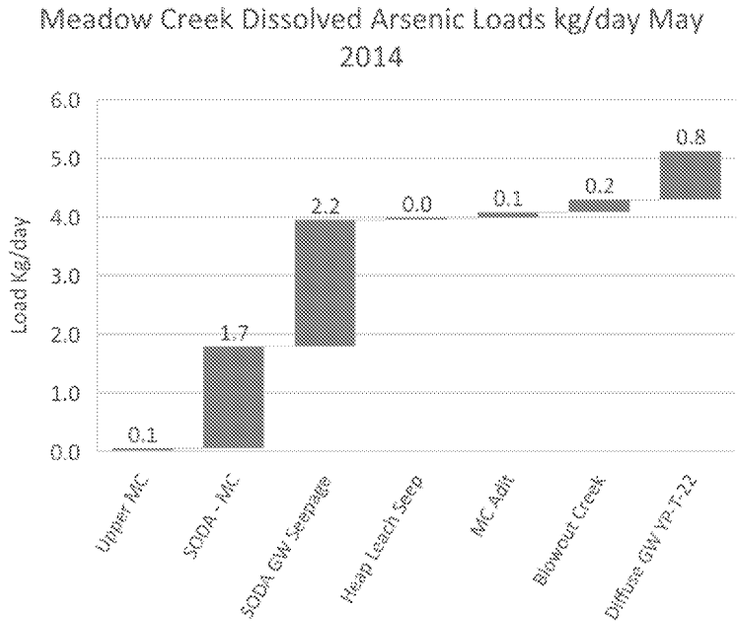


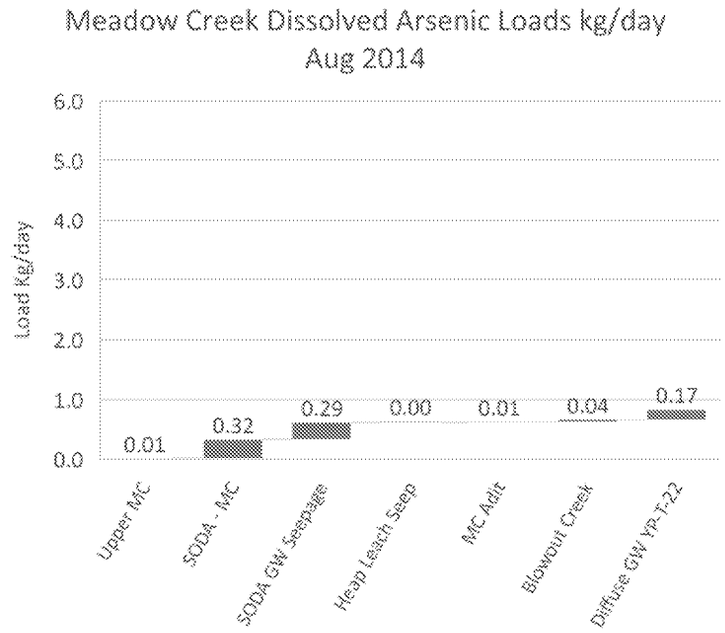
Yellow Pine Pit Reach contributes
50% of load during low flow

Meadow Creek Valley Surface Water Impacts

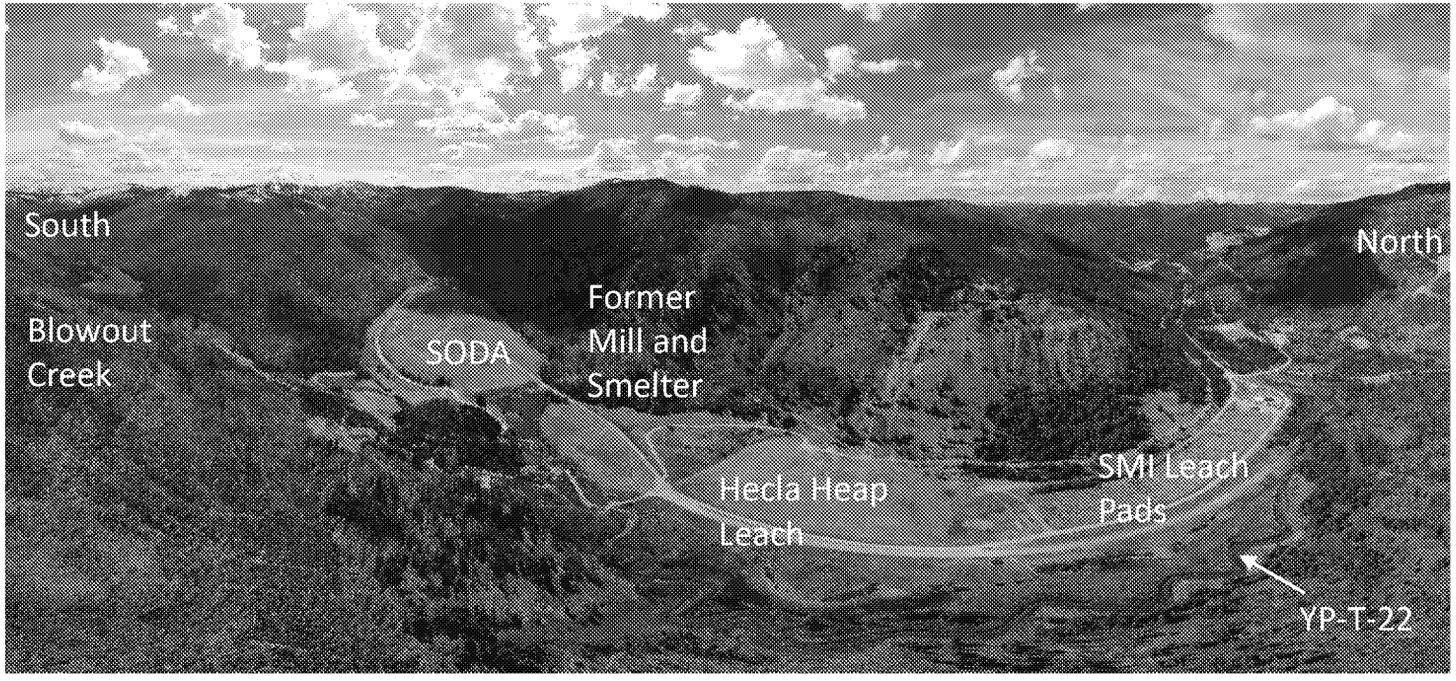
Arsenic loads as percentage of total arsenic (d) at YP-SR-2 during low and high flow

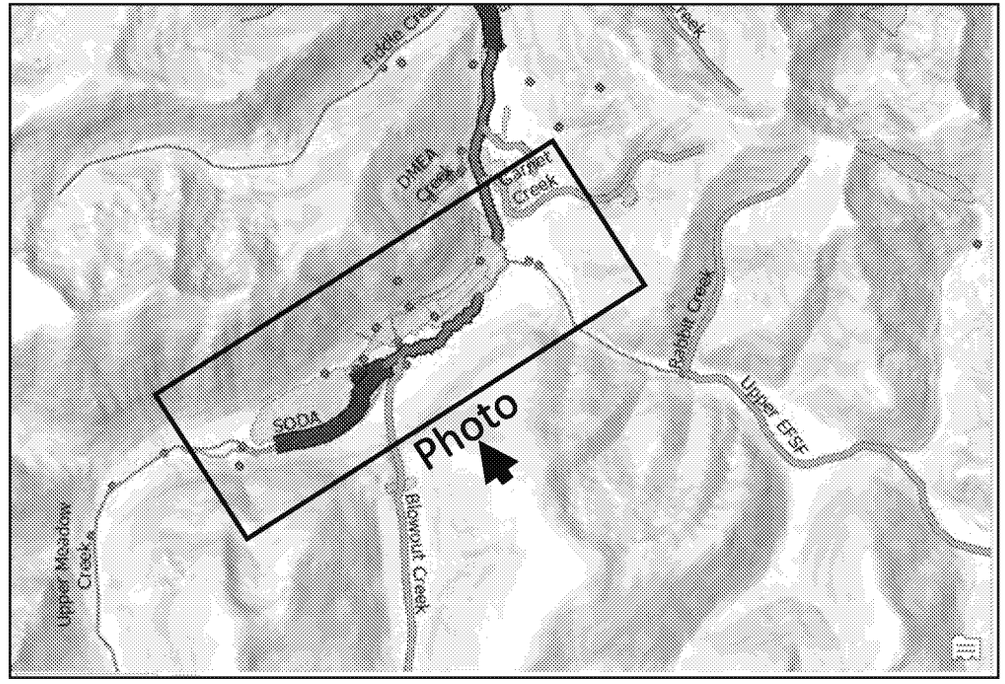
- SODA & Bradley Tailings – 11 to 27%
- Surficial Seeps 0.9% to 0.2%
- Blowout Creek 1-2%
- Diffuse groundwater 3-6%





Panoramic View of Meadow Creek Valley looking west

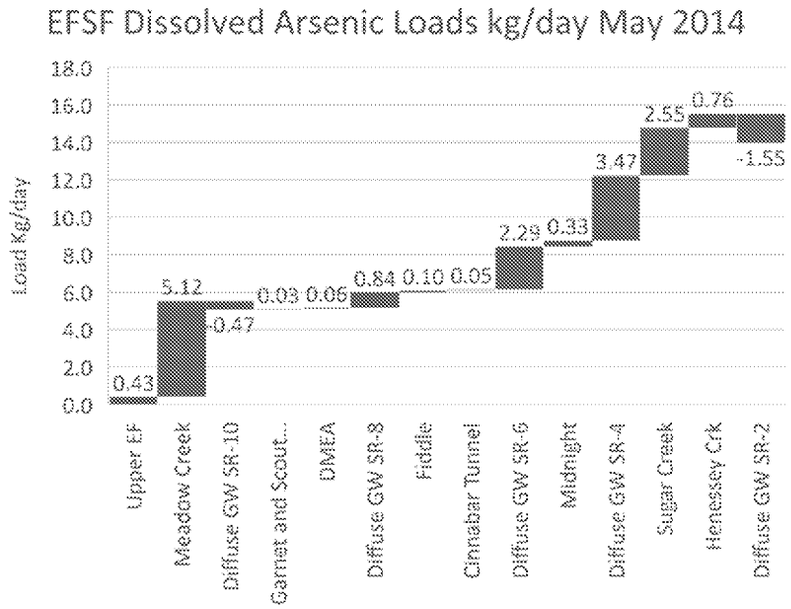


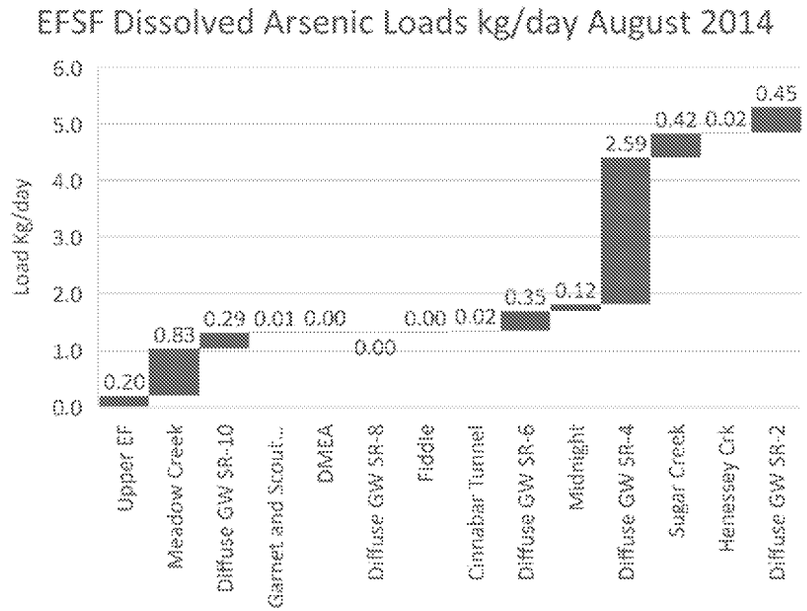


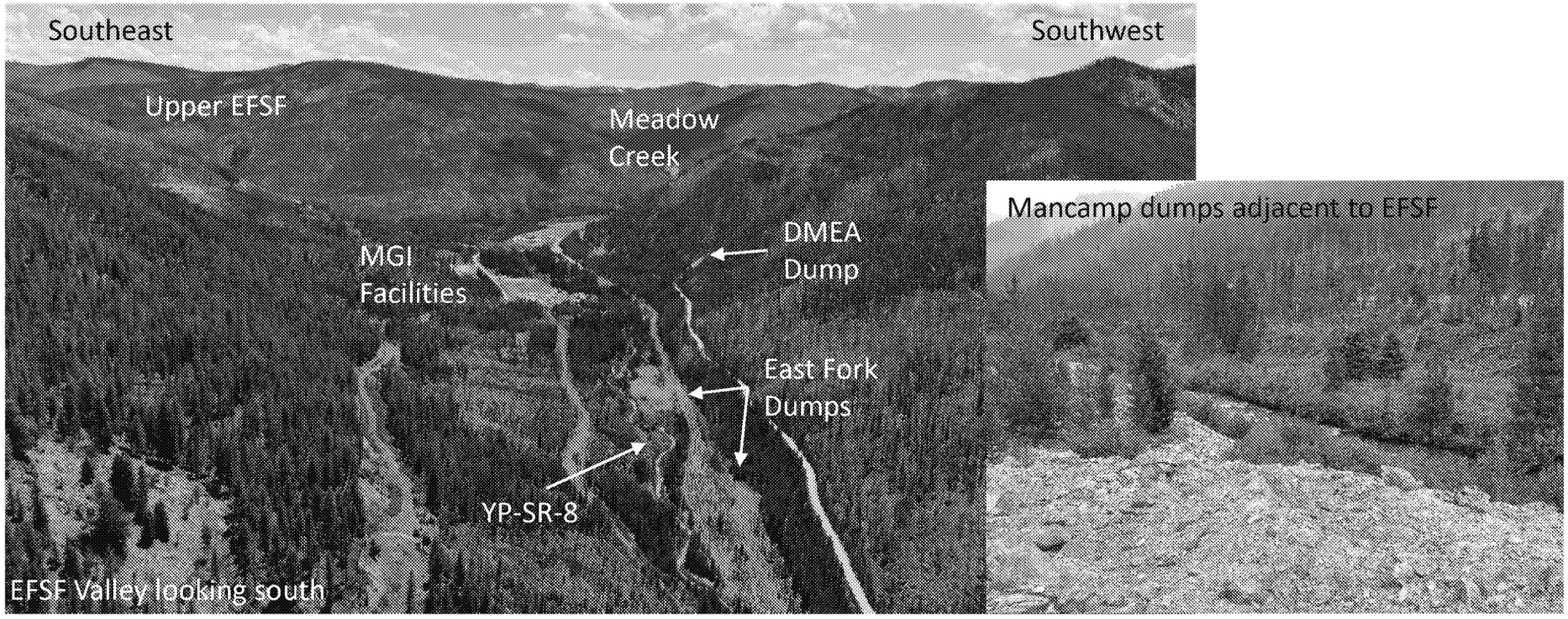
East Fork South Fork above YP Pit Surface Water Impacts

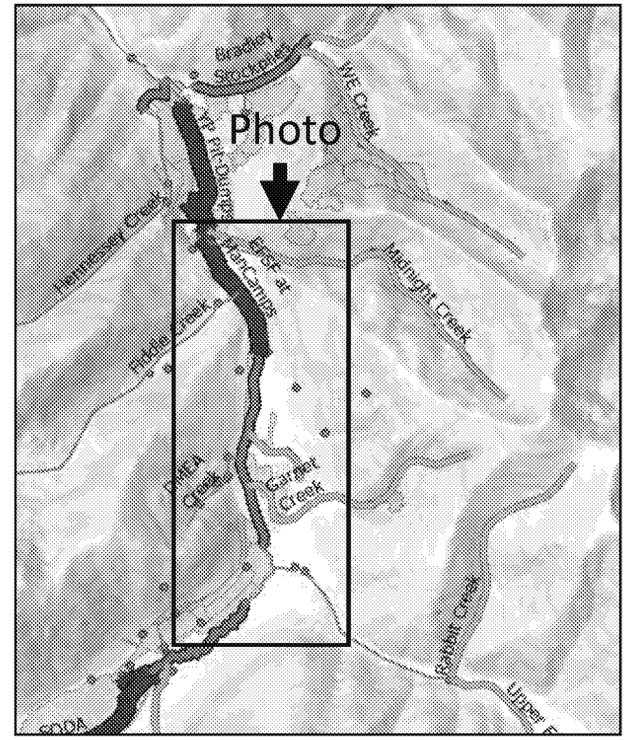
Arsenic loads as percentage of total arsenic (d) at YP-SR-2 during low and high flow

- Upper EFSF 3 to 4%
- Meadow Creek 16 to 36%
- Tributaries 0.3 to 1.5%
- DMEA adit and dump 0.1 to 0.5%
- Inflows adjacent to EF Dumps 6-21%









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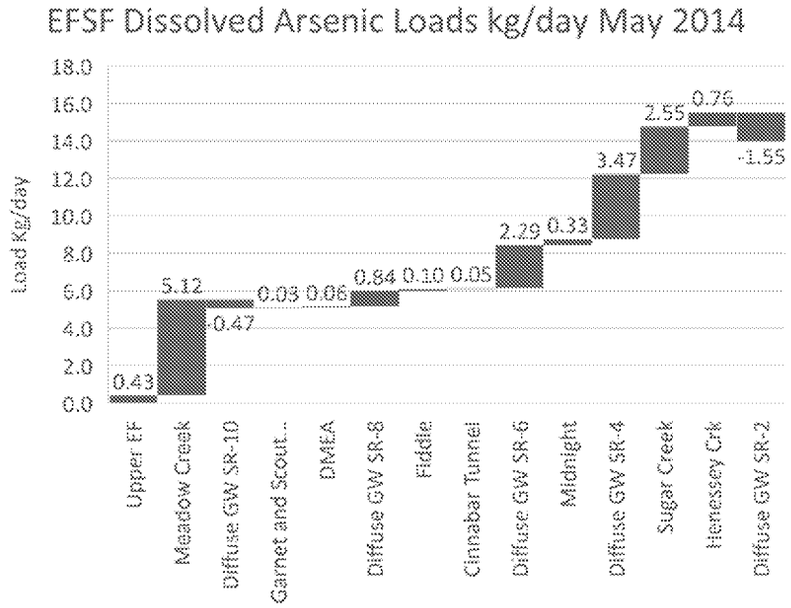
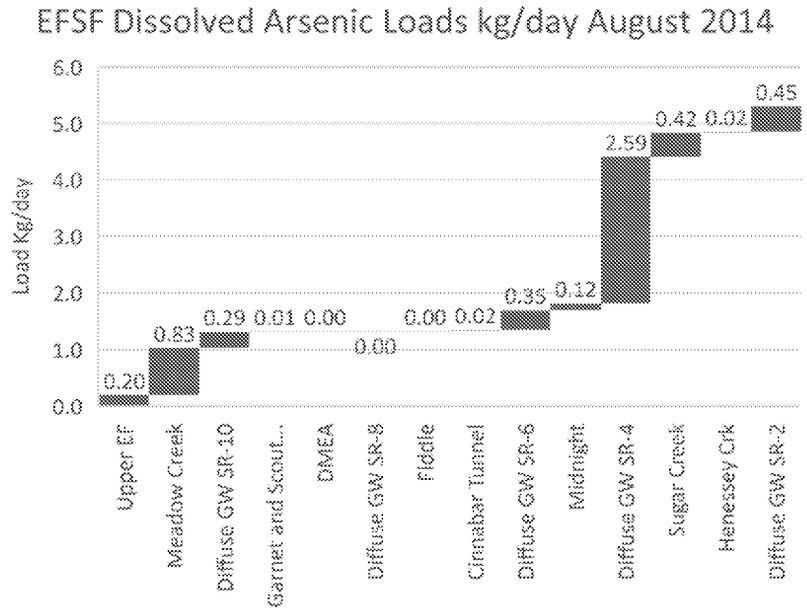
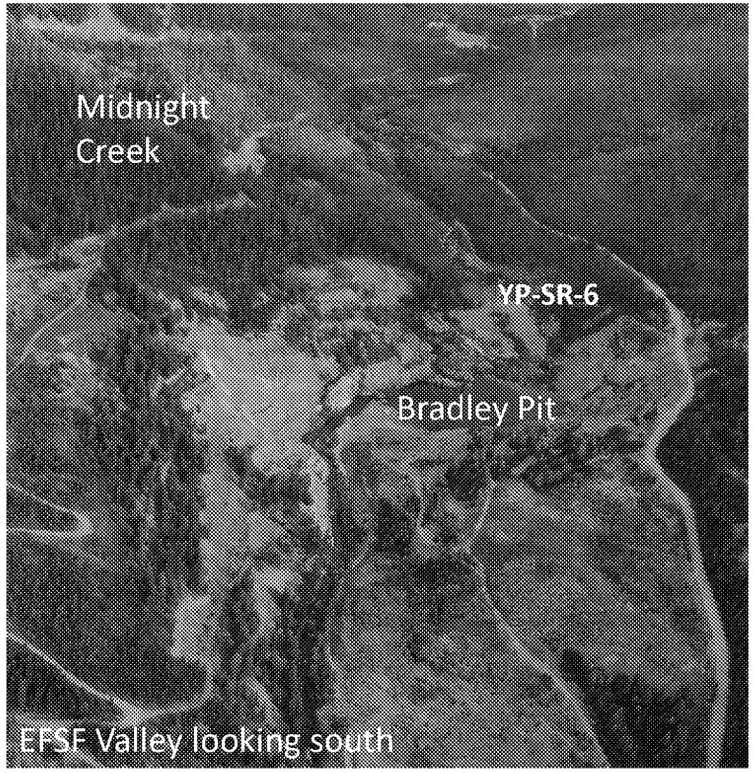
East Fork South Fork through YP Pit Surface Water Impacts

Arsenic loads as percentage of total arsenic (d) at YP-SR-2 during low and high flow

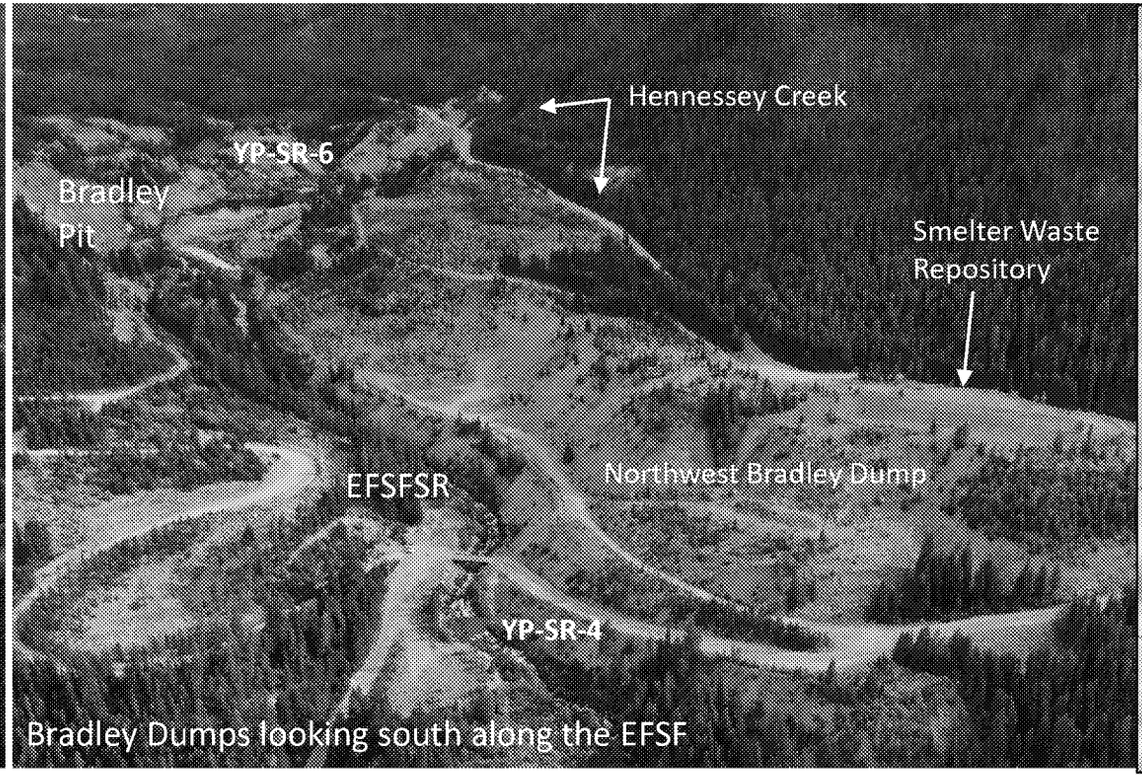
- Cinnabar Tunnel 0.3 to 0.4%
- Midnight Creek 2 to 2.5%
- Inflows through reach including pit and dumps **24 to 48%**
- Hennessey Creek direct load 0.3 to 3%



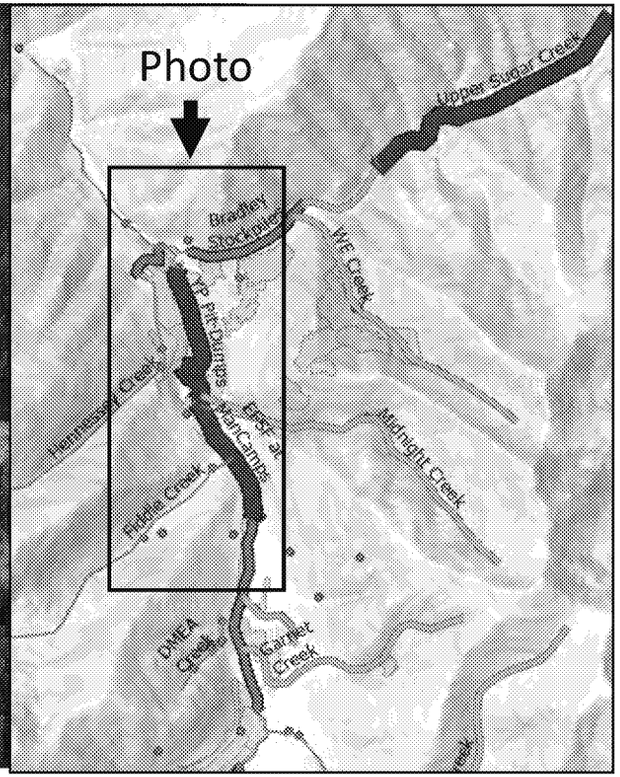




EFSF Valley looking south



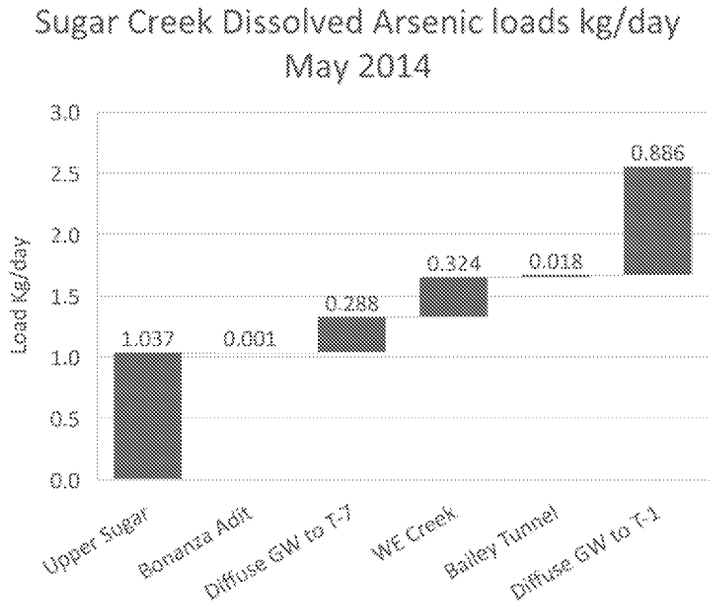
Bradley Dumps looking south along the EFSF

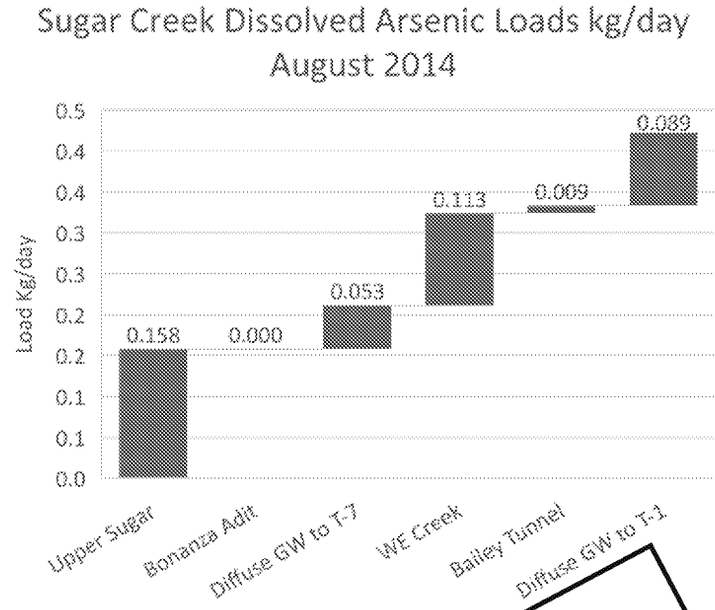


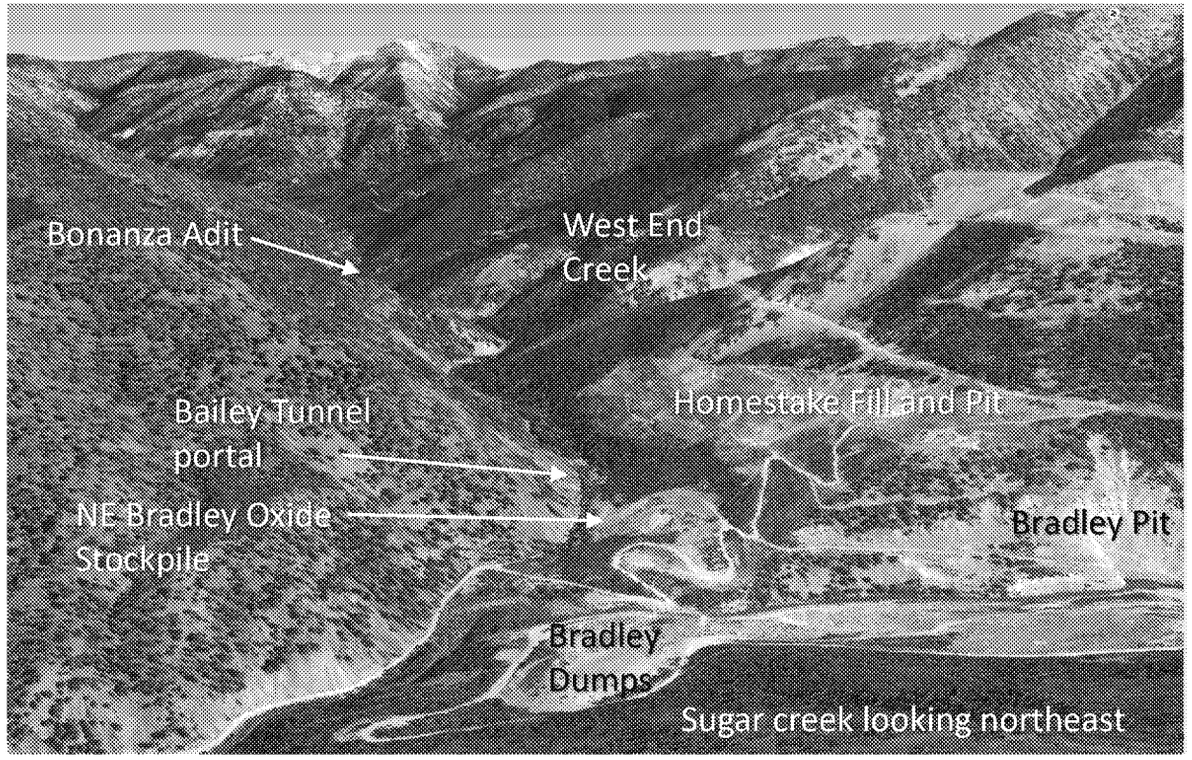
Sugar Creek Surface Water Impacts

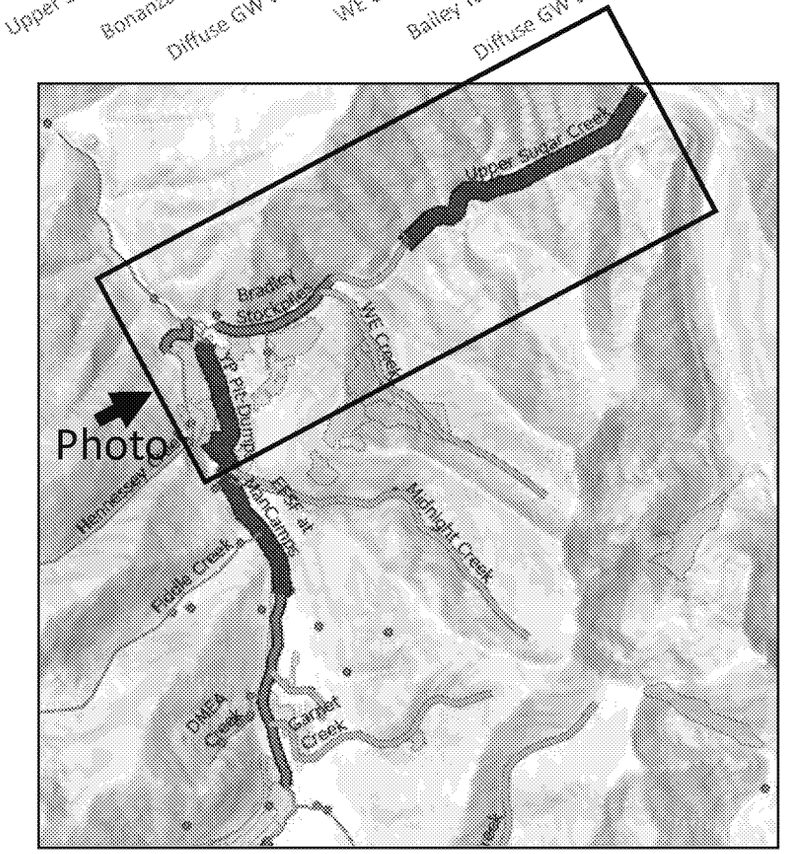
Arsenic loads as percentage of total at YP-SR-2 during low and high flow

- **Sugar Creek contributes 8 to 18% of total**
- Upper sugar creek inflow 3 to 7%
- Bonanza Adit seep 0.01%
- West End Creek 2 to 2.5%
- Bailey Drainage Tunnel Seep 0.1 to 0.2%
- Inflows adjacent to NE Bradley Oxide Stockpile 1.7 to 6%









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Early Action Objectives

- Early Actions that improve surface and ground water quality.
- “Shovel-ready” projects
- Can be completed during the 2020 work season
- Actions eliminated if
  - require mining-scale solutions,
  - appreciable additional field investigations,
  - major engineering in advance of construction,
  - high likelihood or consequence of failure
- Three early actions were identified that all focus on measures to reduce interaction of unimpacted, upgradient water with mineralized legacy waste materials contributing to metal loading in the EFSFSR.

Bradley Dumps and Hennessy Creek

- Patented and Unpatented Mining Claims
- Dumps composed ~4.5 MT of till and sulfide altered waste rock
- Hennessey Creek diverted above dumps
- Inflows through reach including pit and dumps account for **24 to 48%** of arsenic load

Photo looking south along the EFSF from confluence with Sugar Creek

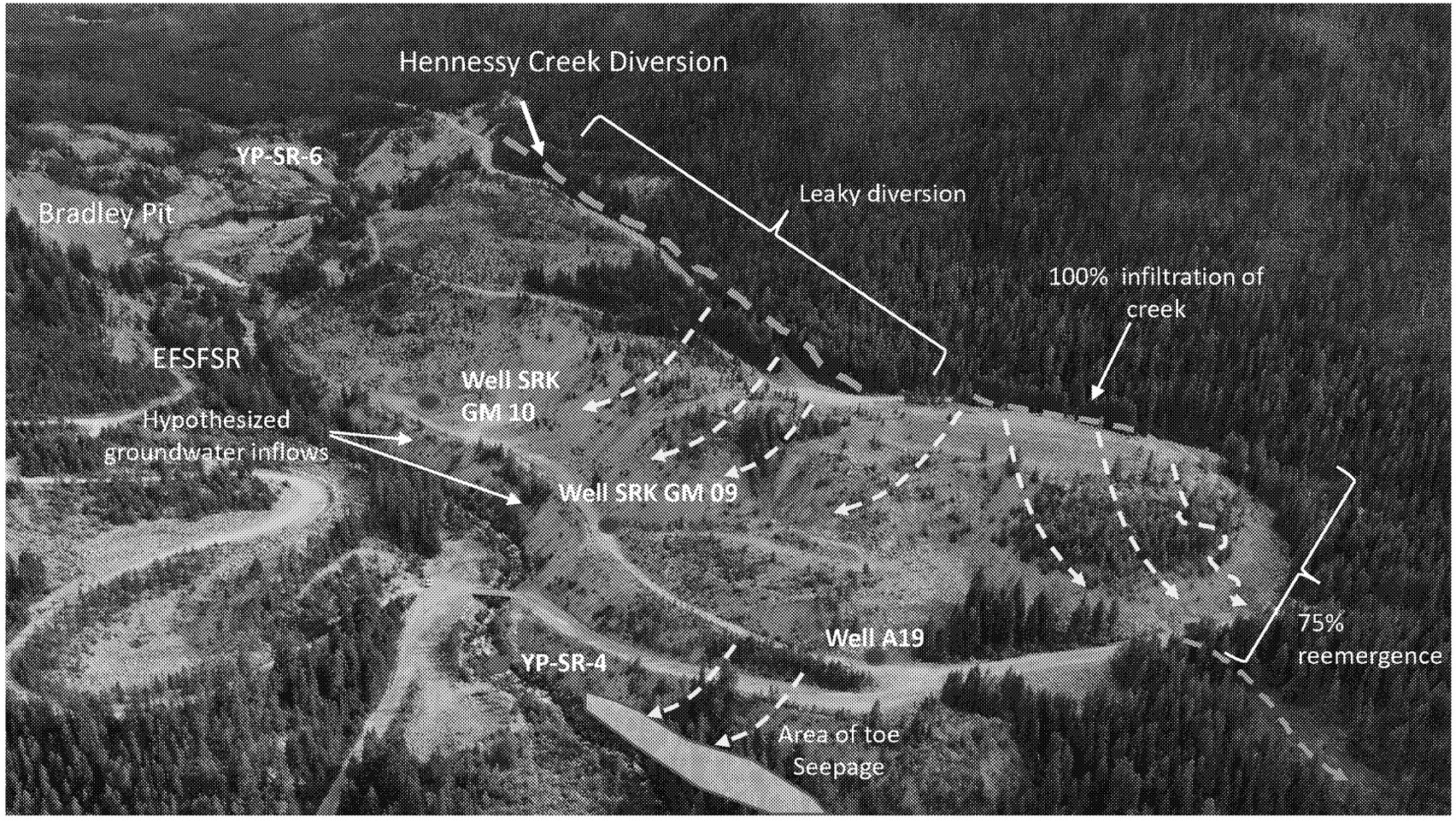
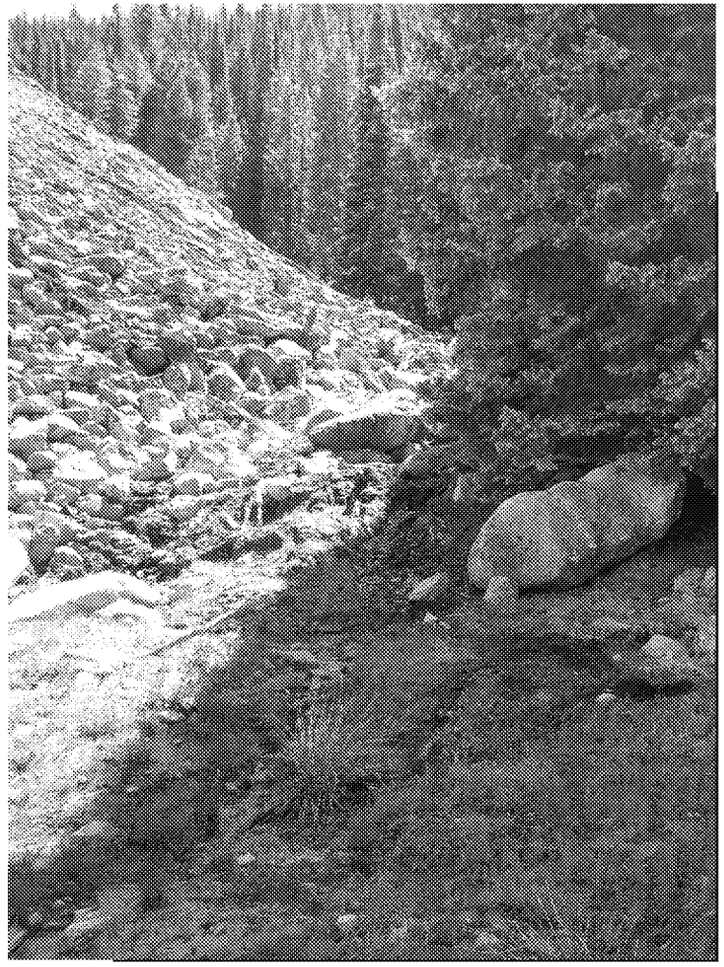


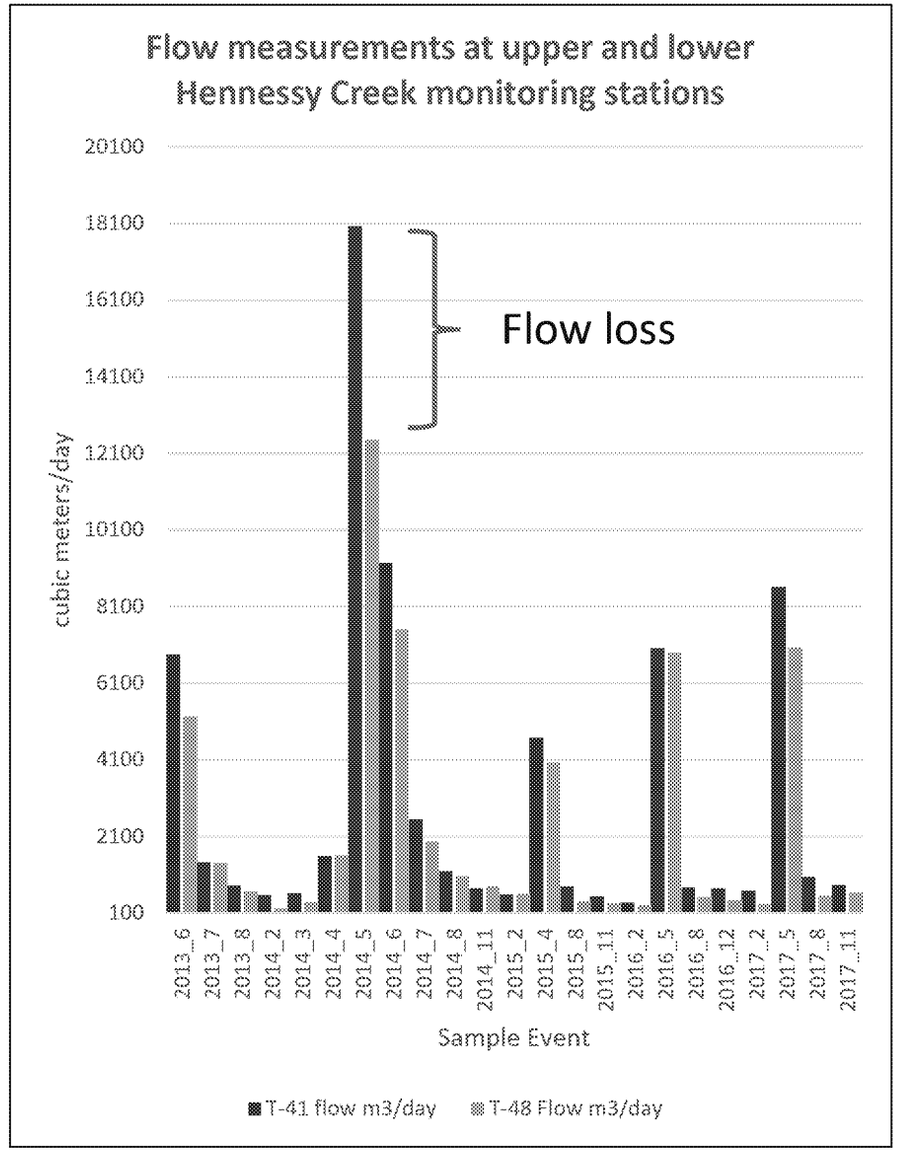
Photo of Hennessy Creek seeping from dump toe

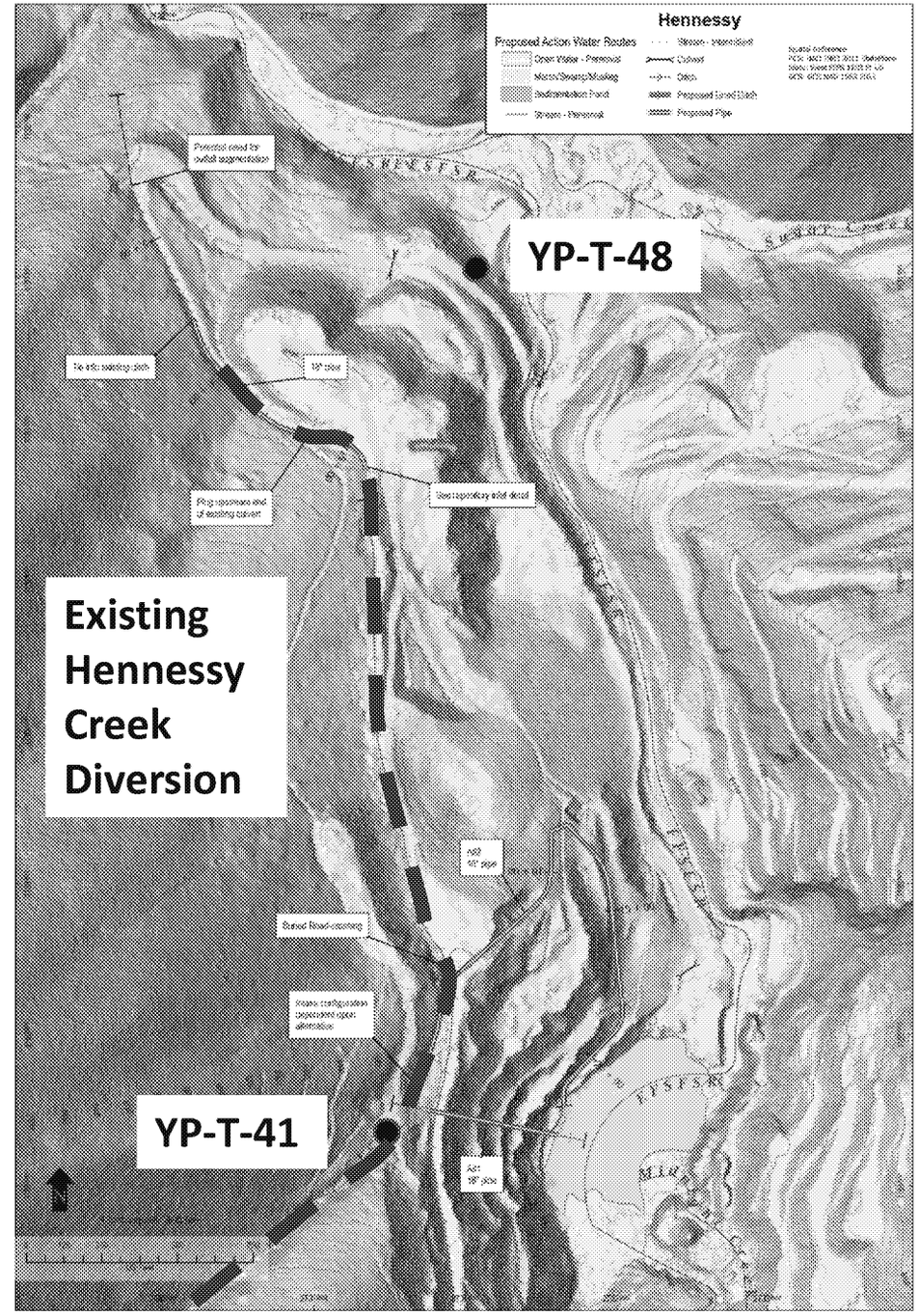


Bradley Dumps and Hennessy Creek Existing Conditions

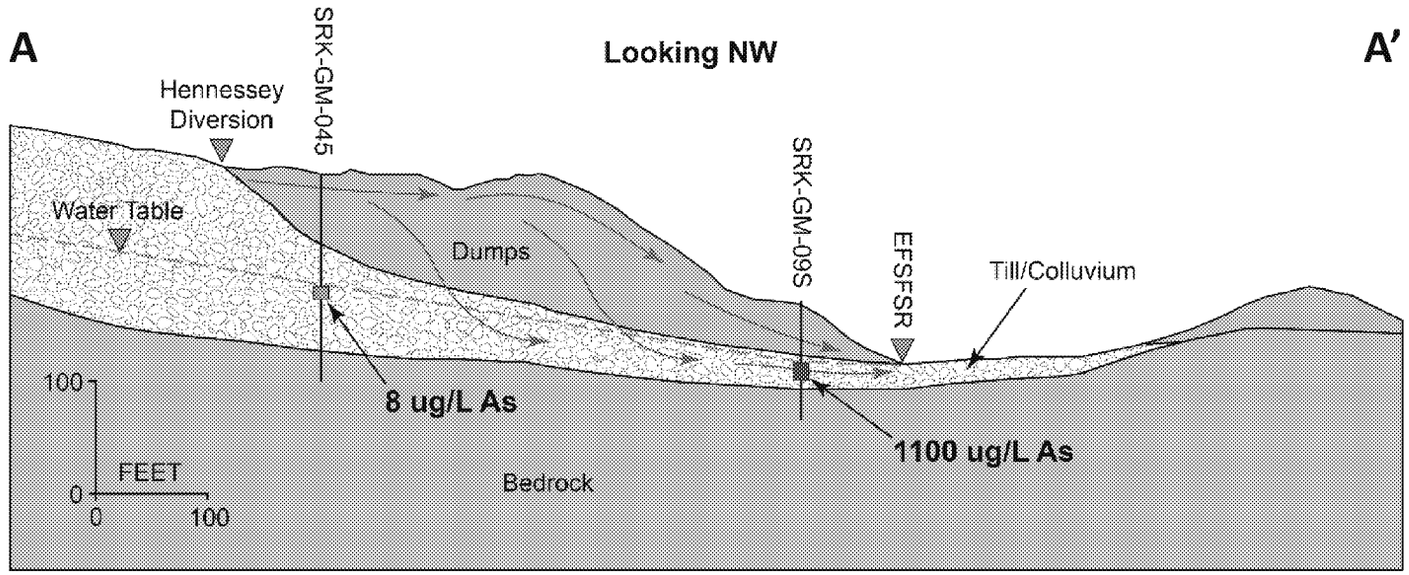
Significant volumes of water leak from the Hennessy Creek Diversion ditch through the Bradley Dumps

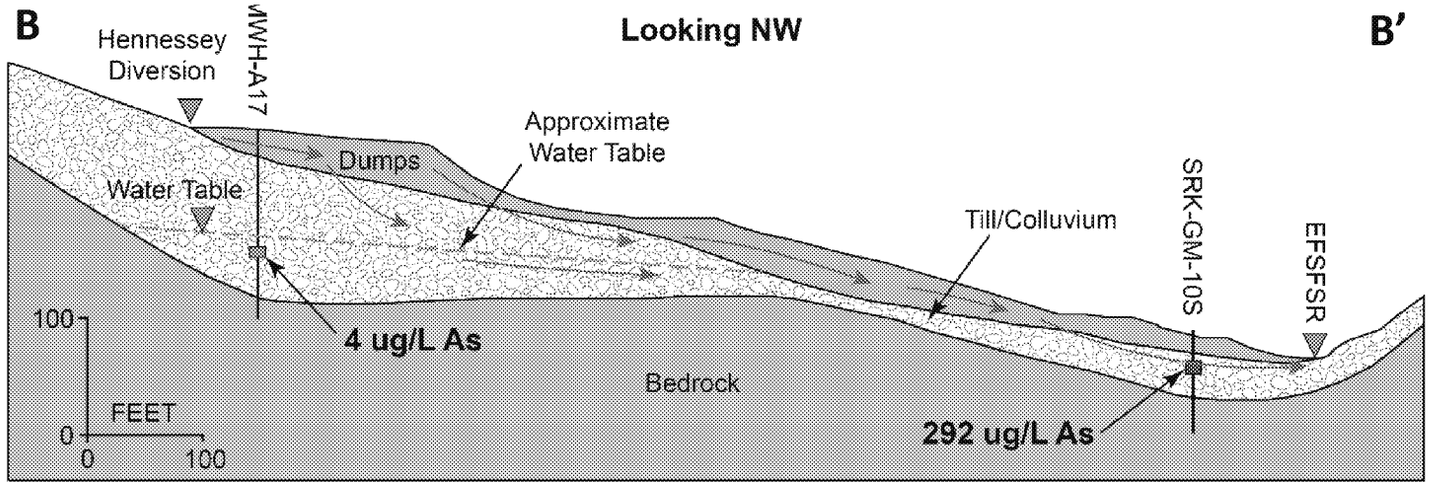
- Hennessy Creek flow measured above and below diversion ditch
- Average infiltration losses of 24%
- Annual infiltration losses of ~300 acre feet
- Annual precipitation on dumps of ~80 acre feet

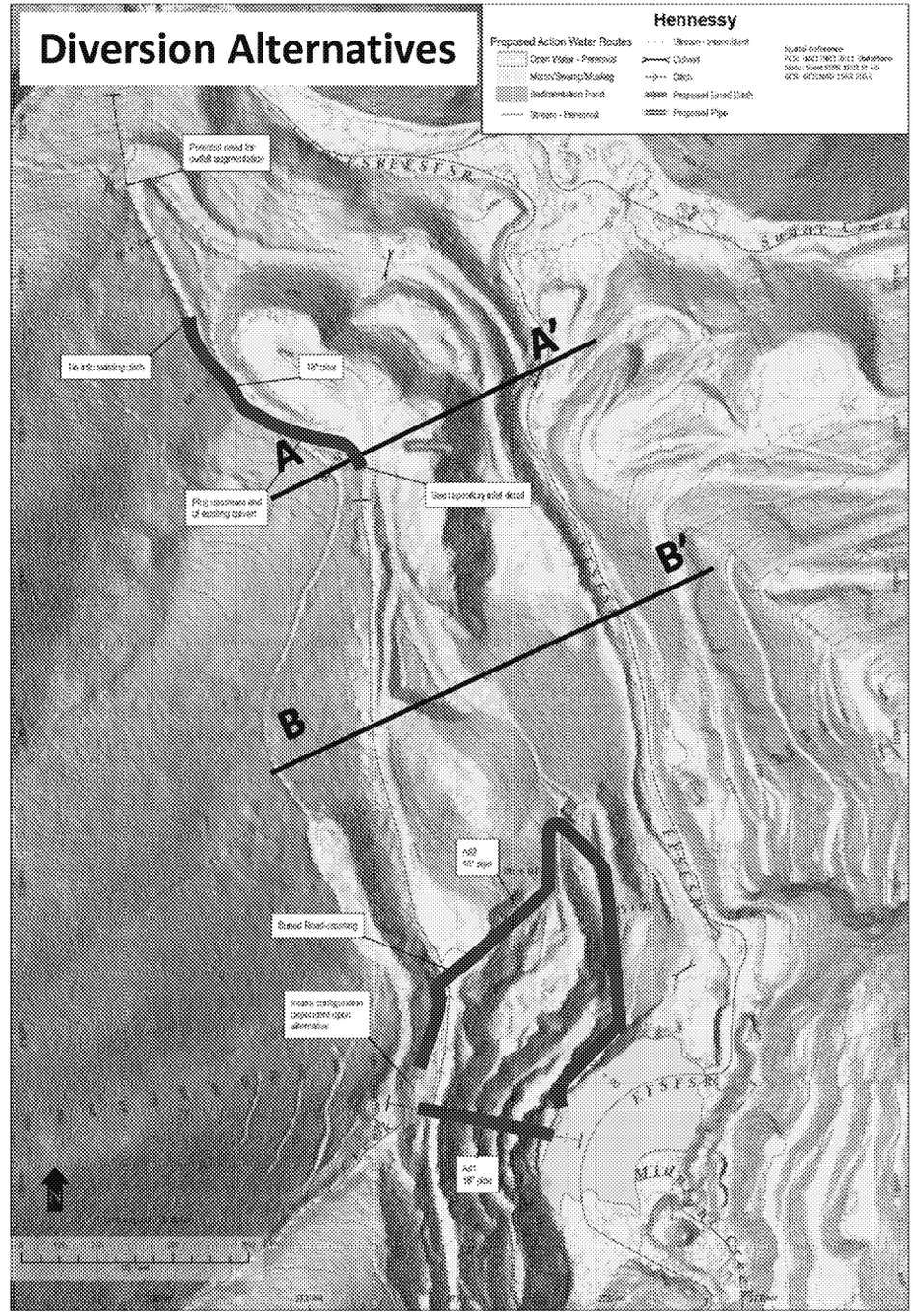




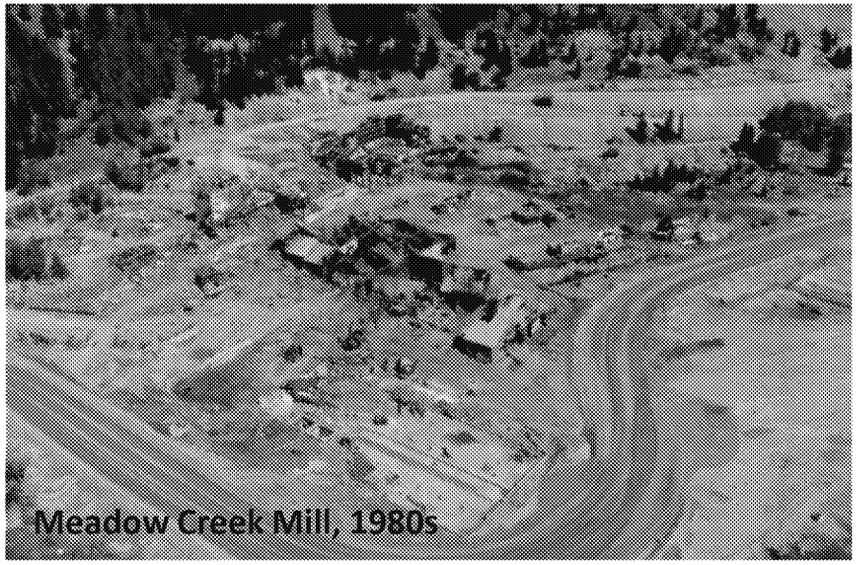
Bradley Dumps and Hennessy Creek
Proposed Early Action
Surface water diversion of Hennessy Creek

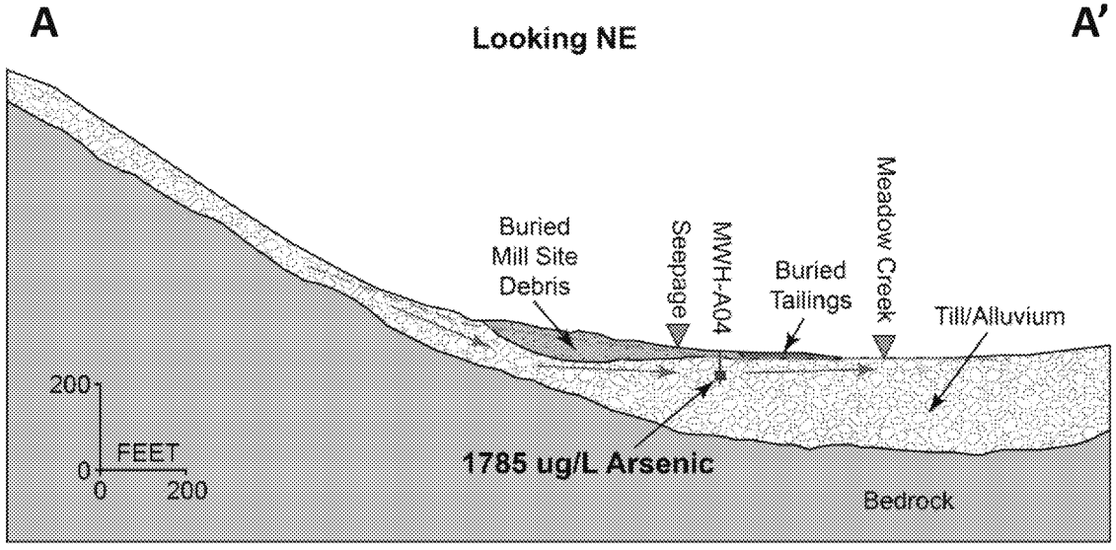


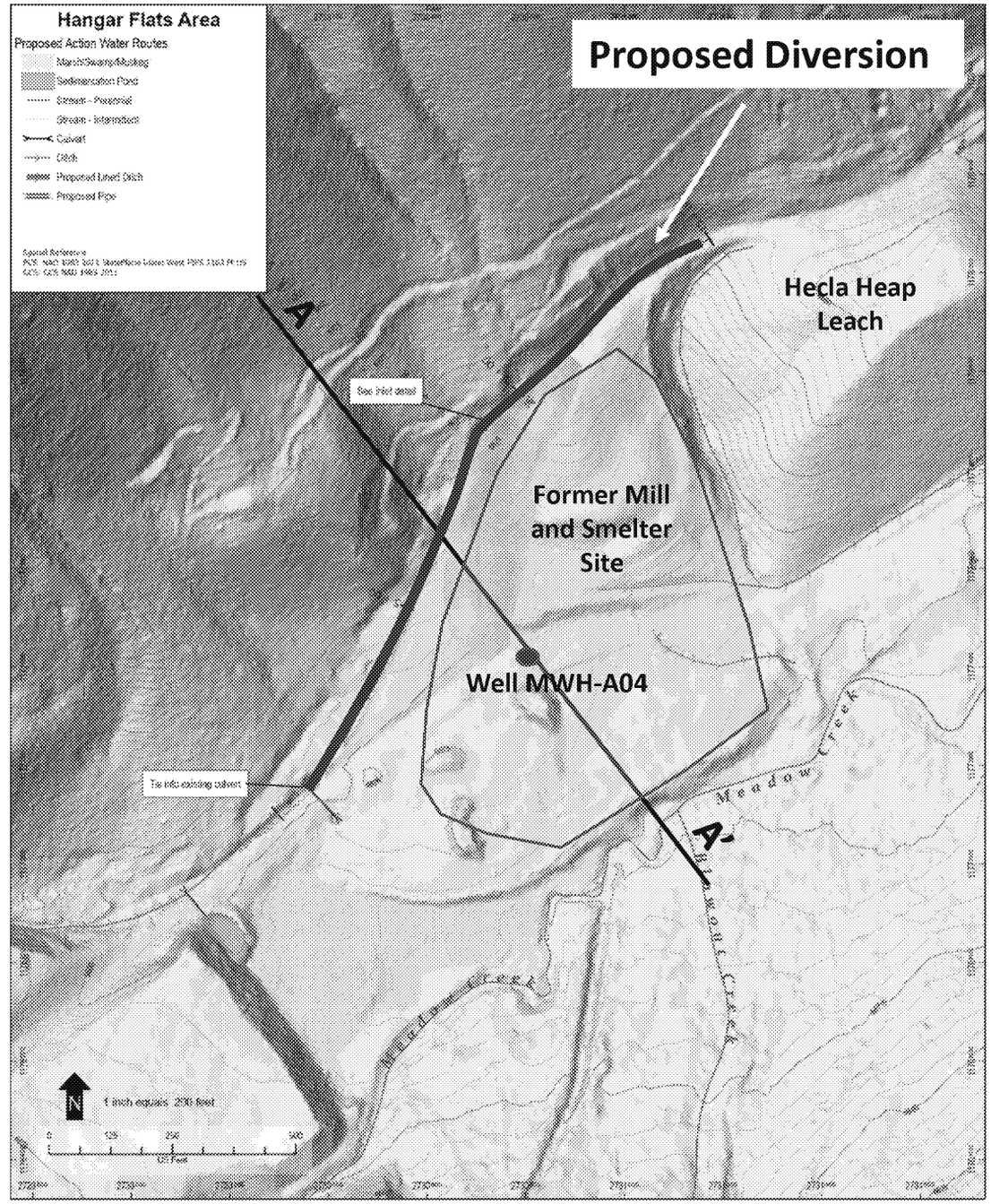




Meadow Creek Mill and Smelter Site
Proposed Early Action
Surface water diversion



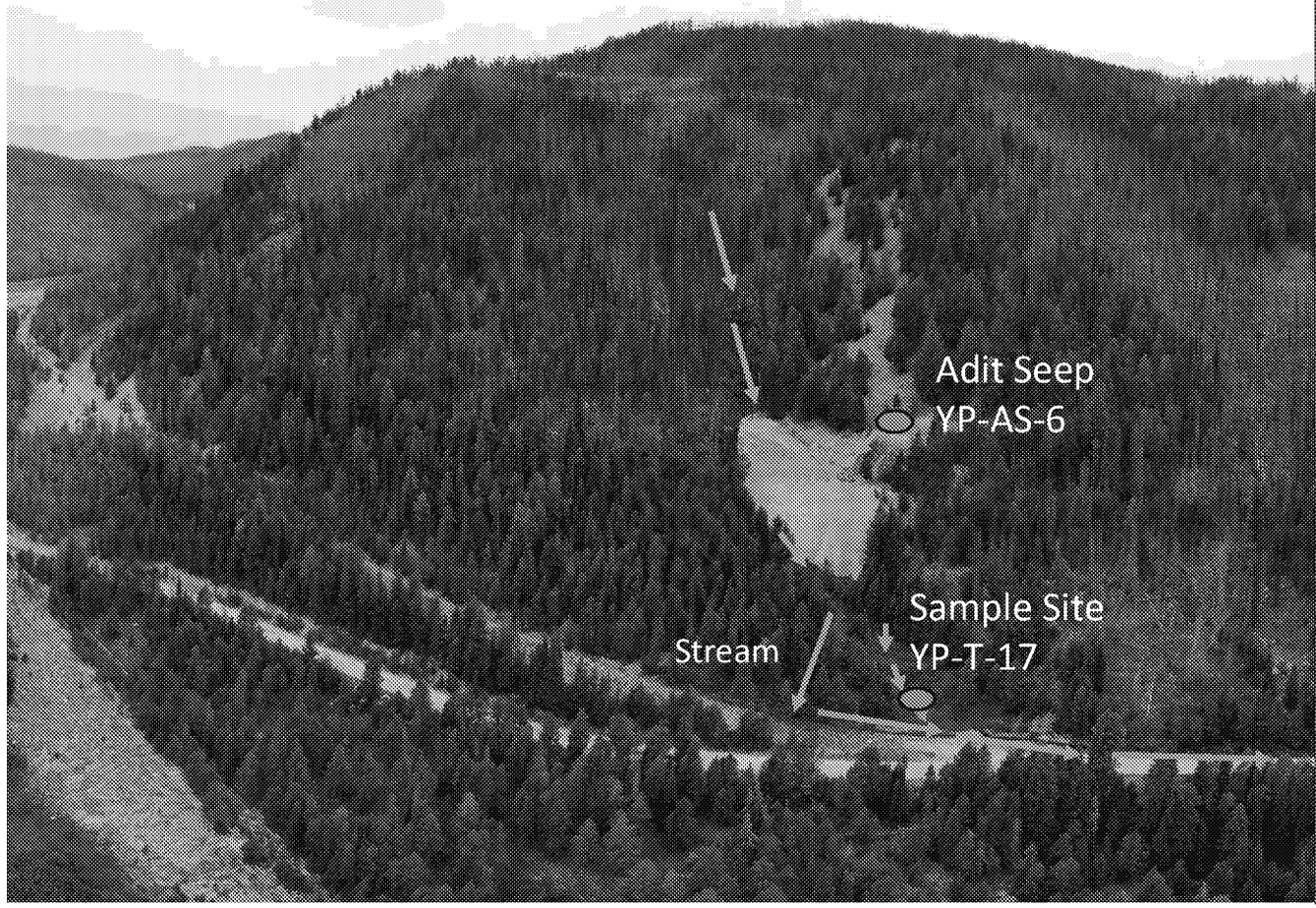


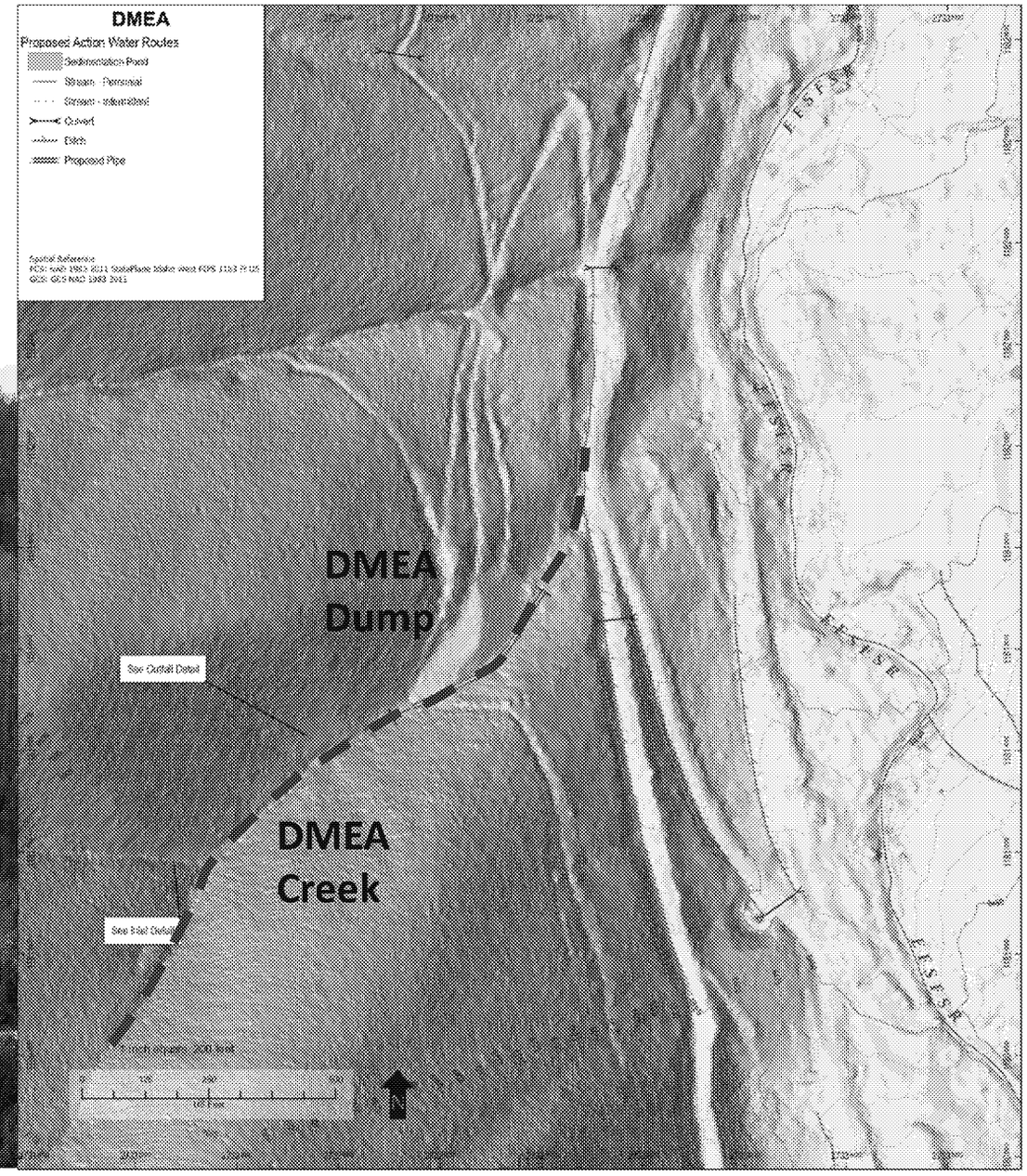


Defense Minerals Exploration Administration (DMEA) Adit and Waste Rock Dump Area

Existing Conditions

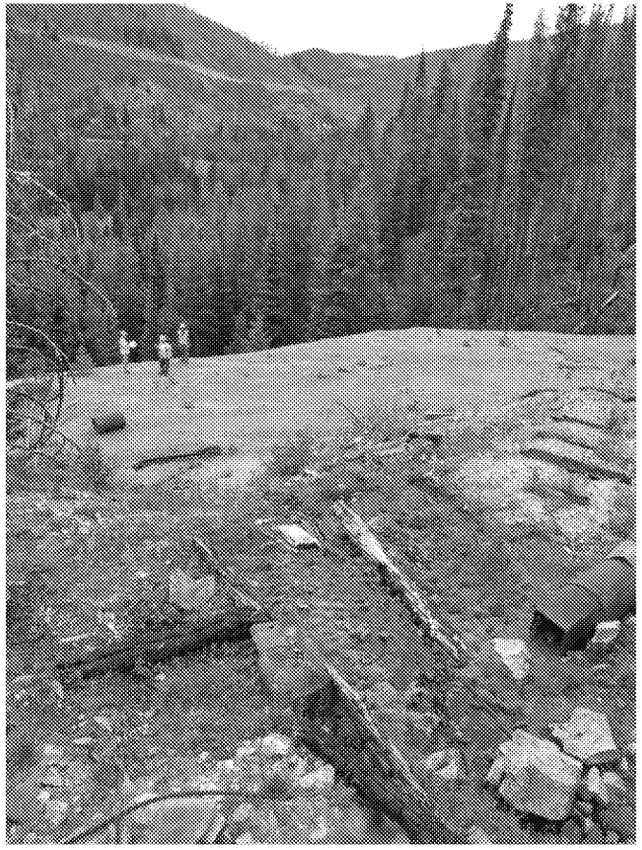
- Un-patented Mining Claims
- DMEA Adit and Waste Rock Dump
- Upstream water quality in DMEA creek exceeds WQ standards
- Significant suspended arsenic load below dumps
- DMEA not included in Stibnite Gold Project



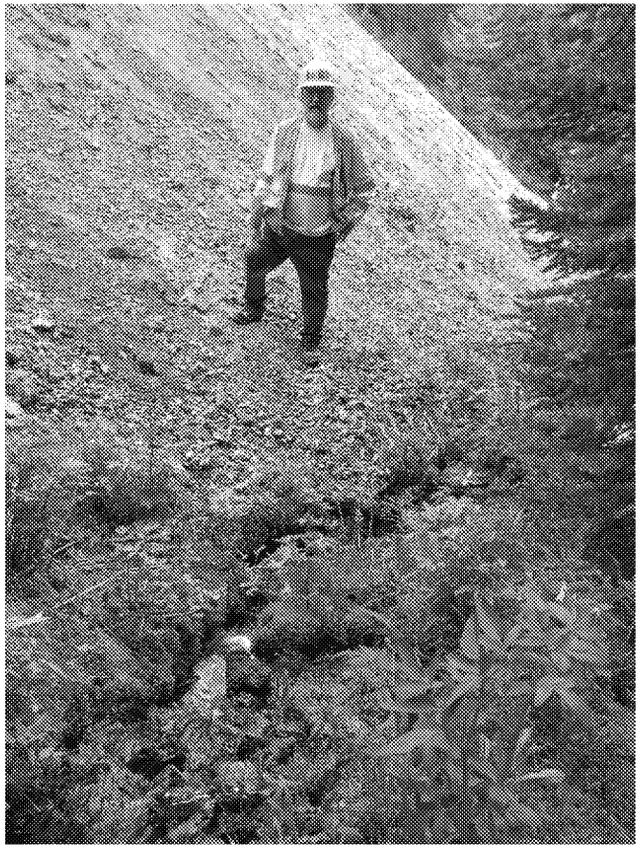


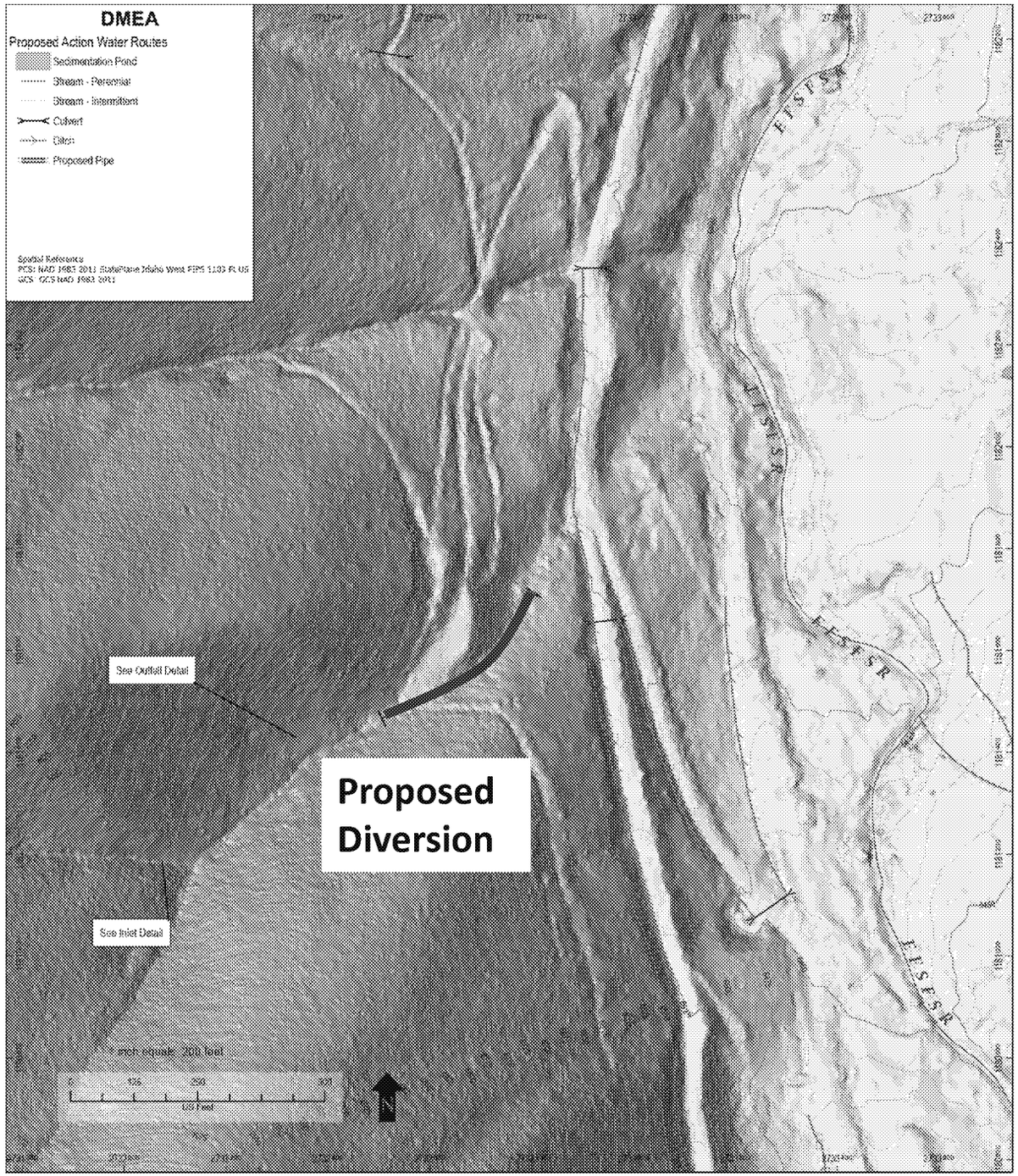
DMEA Adit and Waste Rock Dump Area
Proposed Early Action
Creek Diversion around Waste Rock Dump

Adit Seep



Creek at base of dump





Questions and Discussion

- Proposed Early Actions
  - Hennessy Creek Diversion
  - Diversion around Meadow Creek Mill and Smelter Complex
  - DMEA Adit and Dump Diversion